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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TRAN, LY T

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 03/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/050,930

Applicant(s)

SAIJO ET AL.

Examiner

Ly T TRAN

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9, 11-34 and 36-38 is/are rejected.
- 7) ☒ Claim(s) 7, 8, 10 and 35 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 45.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 15 is objected to because of the following informalities: in claim 15; line 2; "he" should be "the". Appropriate correction is required.
2. Claim 25 is objected to because of the following informalities: in claim 25; line 6; "form" should be "from". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 depends on claim 1, how the on-arrival recovery mode is a mode in which one kind of recovery operations in normal recovery as recited in claim 5 since claim 1 is recited that wherein an in-arrival recovery mode by the recovery means upon first usage of the recording apparatus by a user differs from a normal recovery mode.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 6, 9, 11, 14-33/1 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al. (USPN 6,074,037) in view of Numata et al. (USPN 5,625,384).

With respect to claims 1, 10 and 36, Nakahara et al. discloses an ink jet recording apparatus and a method comprising:

- A carriage for mounting a recording head for effecting recording by discharging recording ink and for moving the recording head (Column 6: line 7-17)
- Recovery means for effecting a recovery operation with respect to the recording head (Column 6: line 24-34)
- Wherein the recording apparatus is forwarded from a manufacturing factory in a condition that the recording head filled with transporting ink different from the recording ink is mounted on the carriage (Column 11: line 11-15).

However, Nakahara et al. fails to teach an on-arrival recovery mode execute by the recovery means upon first usage of the recording apparatus by the user differs from a normal recovery mode executed by the recovery means after the first usage an the limitations claims 2-4, 6, 9, 11, 14-25, 27-33.

Numata et al. teaches an on-arrival recovery mode execute by the recovery means upon first usage of the recording apparatus by the user differs from a normal recovery mode executed by the recovery means after the first usage (Column 14: line 10-37).

With respect to claim 2, Numata et al teaches suction means for effecting suction from the recording head as recovery means, and suction pressure in ink suction means in the on-arrival mode is set to be larger than suction pressure in ink suction in the normal recovery mode (Column 14: line 35-37).

With respect to claim 3, umata et al. teaches a suction amount in ink suction from the recording head by means of the suction means in the on-arrival recovery mode is set to be greater than s suction amount in ink suction in the normal recovery mode (Fig.15 shows suction amount is 1.7g)

With respect to claim 4, Numata et al. teaches the number of suction operation in ink suction from the recording head in on-arrival recovery mode is set to be larger than the number of suction operations in ink suction in the normal mode (Column 14: line 35-37).

With respect to claim 6, Numata et al teaches the number idle suction operations for discharging the ink from a cap in a communication condition between the interior of the cap and the atmosphere upon ink suction in the on-arrival recovery mode is set to be greater than the number of idle suction operations in the normal recovery mode (Column 14: line 35-37).

With respect to claim 9, Numata et al. teaches the a wiper for wiping the recording head and ink the on-arrival recovery mode, after ink suction from the recording head is firstly effected by the suction means, wiping of the wiper is effected (Fig.15).

With respect to claim 11, Numata et al. teaches the recording ink includes color material (Column 6: line 7-11) and the transporting ink does not include color material or has color component fewer than that the recording ink (Column 1: line 43-45).

With respect to claims 14 -25, Numata et al teaches the recording head includes an ink discharging electro-thermal converter for generating thermal energy utilized for discharging the ink and the ink is discharged by utilizing pressure change based on growth of a bubble created by boiling caused the thermal energy generated by the electro-thermal converter and ink is heat by an ink temperature maintaining electro-thermal converter within the recording head before or during the ink suction or from before ink suction to the rend of the ink suction (Column 11: line 1-6).

With respect to claim 26, Since Numata teaches recovery operation based on the head, ink is discharged by an ink discharging electro-thermal converter within the recording head from before the ink suction to the end of ink suction in the on-arrival recovery mode, it's inherently that an input signal value, frequency, ink color to be inputted and a discharge port can be selected appropriately and any input signal value, frequency and ink color can be inputted to the ink temperature holding electro-thermal converter of the recording head in older to operate the apparatus.

With respect to claim 27, Numata et al teaches time counting means for counting an elapsed time from the forwarding (Fig.5).

With respect to claim 28, Numata et al teach time reading means for reading the elapsed time from the forwarding (Column 19: line 5-15).

With respect to claim 29, Numata et al. teaches control means for judging and determining a heating amount of the recording head on the basis of the elapsed time from the forwarding (Column 19: line 22-29).

With respect to claim 30, Numata teaches temperature history means for storing temperature history from forwarding (column 19: line 28-29).

With respect to claim 31, Numata teaches temperature history reading means for reading temperature history from the forwarding (Column 19; line 39-48).

With respect to claim 32, Numata teaches heating control means for judging and determining a heating amount of the recording head on the basis of temperature history from the forwarding (Column 19: line 22-29).

With respect to claim 33, Numata et al. teaches a heating temperature for each color can be set by the heating control means (Column 19: line 41-43)

With respect to claim 34, Munata teaches storing means capable of re-writing and calling an elapsed time and temperature history (Column 19: line 41-48, Column 5-15).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teaching of Nakahara to have an on-arrival recovery mode execute by the recovery means upon first usage of the recording apparatus by

Art Unit: 2853

the user differs from a normal recovery mode executed by the recovery operation as taught by Numata et al. The motivation of doing so is to prevent an abnormal discharge due to an increase in ink viscosity or generation of or increase in the number of bubble in the liquid chamber of the head (Numata USPN 5,625,384, Column 14: line 13-16)

5. Claims 13 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al. (USPN 6,074,037) in view of Nishioka et al. (USPN 6,364,448).

With respect to claims 13 and 38, Nakahara et al. discloses an apparatus and a method for an ink jet recording head comprising:

- A mounting section for mounting an ink tank for storing the recording ink to be supply to the recording head (Column 6: line 7-11)
- Wherein the recording apparatus is forwarded from a manufacturing factory in a condition that the recording head filled with transporting ink different from the recording ink is mounted on the carriage (Column 11: line 11-15)

However, Nakahara fails to teach detection means for detecting whether the ink tank is mounted on the mounting section and alarm means for emitting alarm to the user if the fact that the ink tank is not mounted on the mounting section upon first usage of the recording apparatus by the user is detected by means of the detection means

Nishioka et al teaches detection means for detecting whether the ink tank is mounted on the mounting section (Column 3: line 56-60) and alarm means for emitting alarm to the user if the fact that the ink tank is not mounted on the mounting section

Art Unit: 2853

upon first usage of the recording apparatus by the user is detected by means of the detection means (Column 4: line 1-4, line 9-11).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teaching of Nakahara et al to have a detection means for detecting whether the ink tank is mounted on the mounting section and alarm means for emitting alarm to the user if the fact that the ink tank is not mounted as taught by Nishioka et al. The motivation to doing so is to prevent damage of the print head.

6. Claims 14-33/13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al. (USPN 6,074,037) in view of Nishioka et al. (USPN 6,364,448) as applied to claim 13 above, further in view of Numata (USPN 5,625,284)

The combination of Nakahara and Nishioka et al fails to teach all limitation in claims 14-33/13.

Numata teaches all the limitation in claims 14-33/33 (see paragraph 4 above).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Nakahara and Nishioka to have a heating temperature for each color can be set by the heating control means as taught by Numata et al. The motivation of doing so is to easily to control the temperature of each head.

Art Unit: 2853

7. Claims 12 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al. (USPN 6,074,037) in view of Harrington, III et al. (USPN 5,627,572).

With respect to claims 12, 35 and 37, Nakahara et al. discloses an ink jet recording apparatus and a method comprising:

- A carriage for mounting a recording head for effecting recording by discharging recording ink and for moving the recording head (Column 6: line 7-17)
- Recovery means for effecting a recovery operation with respect to the recording head (Column 6: line 24-34)
- Wherein the recording apparatus is forwarded from a manufacturing factory in a condition that the recording head filled with transporting ink different from the recording ink is mounted on the carriage (Column 11: line 11-15)

However, Nakahara et al fails to teach an on-arrival recovery mode is the same as a recovery mode executes upon exchange of the recording head among plurality of recovery modes executed by the recovery means after the first usage.

Harrington teaches an on-arrival recovery mode is the same as a recovery mode executes upon exchange of the recording head among plurality of recovery modes executed by the recovery means after the first usage (Column 13: line 48-63).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have an on-arrival recovery mode is the same as a recovery mode executes upon exchange of the recording head among plurality of recovery

Art Unit: 2853

modes executed by the recovery means after the first usage as taught by Harrington.

The motivation of doing so is to maintain the head.

8. Claims 14-33/12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al. (USPN 6,074,037) in view of Harrington, III et al. (USPN 5,627,572) as applied to claim 12 above, further in view of Numata (USPN 5,625,284).

The combination of Nakahara and Harrington fails to teach all limitation in claims 14-33/13.

Numata teaches all the limitation in claims 14-33/33 (see paragraph 4 above).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Nakahara and Harrington to have a heating temperature for each color can be set by the heating control means as taught by Numata et al. The motivation of doing so is to easily to control the temperature of each head.

Allowable Subject Matter

9. Claims 7, 8, 10 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 7 is allowable over prior art of record because at least prior art have not been found to anticipate or teach the number of wiping operation of the wiper after the ink suction from the recording head by suction means in on-arrival recovery mode is set

Art Unit: 2853

to be greater than the number of wiping operation after ink suction in the normal recovery mode.

Claim 8 is allowable over prior art of record because at least prior art have not been found to anticipate or teach the number of cleaning operation of the cleaner after the wiping of the wiper in on-arrival recovery mode is set to be greater than the number of cleaning operation after the wiping in the normal recovery mode.


Claims 10 and 35 are allowable over prior art of record because at least prior art have not been found to anticipate or teach the viscosity if the transporting ink is greater than that of the recording ink.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ly T TRAN whose telephone number is 703-308-0752. The examiner can normally be reached on M-F (7:30am-5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 703-308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0967.


February 19, 2003


HAI PHAM
PRIMARY EXAMINER